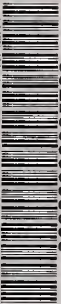


ONTARIO MINISTRY OF ENVIRONMENT



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## OPERATING SUMMARY

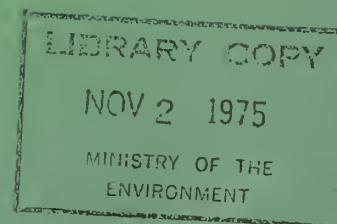
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TOWN OF

# ST. MARYS

## WATER POLLUTION CONTROL PLANT

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St. Marys : water pollution  
control plant.

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Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER  
Honourable William G. Newman

DEPUTY MINISTER  
E. Biggs

ASSISTANT DEPUTY MINISTER  
REGIONAL OPERATIONS  
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, SOUTHWESTERN REGION  
D. McTavish

MANAGER, UTILITY OPERATIONS  
A. Ladbroke

ST. MARYS

WATER POLLUTION CONTROL PLANT

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by  
Plant Performance Unit  
TECHNICAL SERVICES BRANCH  
T. Cross, Director



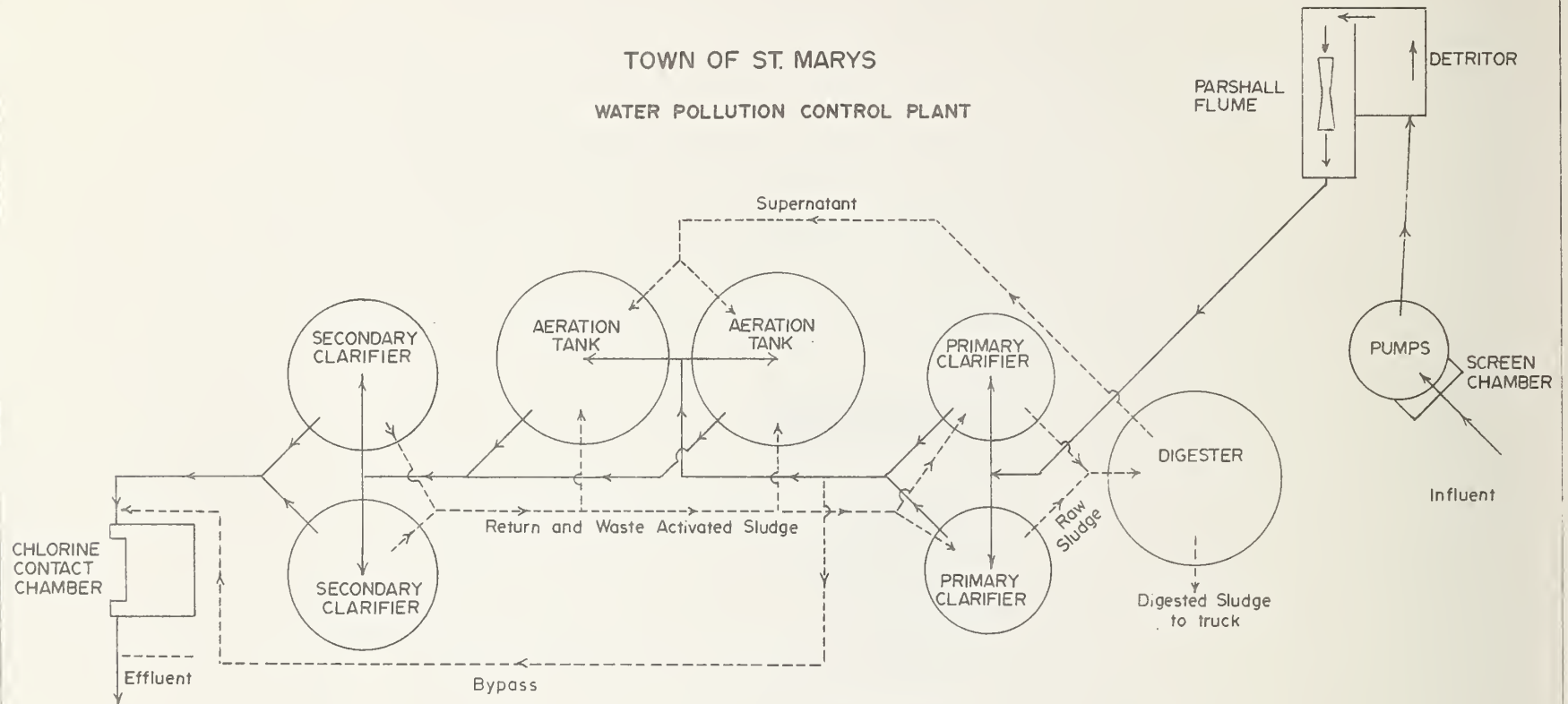
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## CONTENTS

Title Page . . . . .	1
Flow Diagram . . . . .	4
Design Data . . . . .	5
Operating Cost . . . . .	6
Process Data . . . . .	8

TOWN OF ST. MARYS  
WATER POLLUTION CONTROL PLANT



# DESIGN DATA

Project Town of St. Marys WPCP

Project No. 1-0030-66

Design Flow 0.8 MIGD

RAW SEWAGE PUMPING:

3 FLYGT Model CP-3200 submersible pumps  
each rated 1000 USGPM at 40' TDH

COMMINUTOR:

Type - ECODYNE Mod 25R

SCREENING:

Bar Screen

DETRITOR:

Type - DORR-OLIVER Type WA. Cap. 3.8 M.G.D.

PRIMARY CLARIFIERS:

2, each 30.0' i.d. x 11.5' swd

Volume (total) 104540 I. gal. Detention: 3.1 hr.

Overflow rate: 560 gpd per sq. ft.

Raw Sludge Pumps: Type - CARTER

AERATION TANKS:

2, each 36.0' i.d. x 15.0' swd

Volume (total) 190,620 I. gal. Detention: 5.7 hr.

Aerators: Type AMES-CROSTA

Return Sludge Pumps: 2 SMART-TURNER Model 3 WPCS

SECONDARY CLARIFIERS:

2, each 35.0' i.d. x 10.0' swd

Volume (total) 120,947 I.G. Detention: 3.5 hr.

Overflow Rate: 415 gpd per sq. ft.

CHLORINE CONTACT CHAMBER 4-pass:

2 passes 4.4' w x 13.0' l x 9.5' swd

1 pass 4.8' w x 13.0' l x 9.5' swd

1 pass 6.7' w x 13.0' l x 9.5' swd

Volume (total) 1528 I.G. Detention: 29 min.

CHLORINATOR TYPE:

Wallace and Tiernan

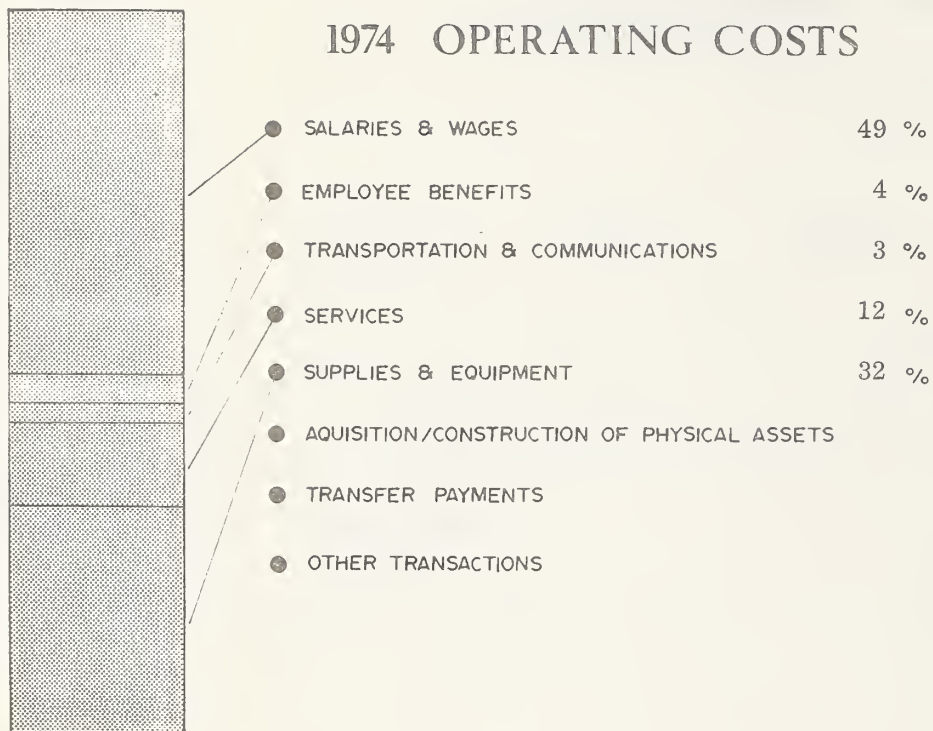
PRIMARY DIGESTER:

one, 40.0' i.d. x 20.0' swd

Volume: 26650 cu. ft.

# ANNUAL COSTS

## 1974 OPERATING COSTS



## YEARLY OPERATING COSTS

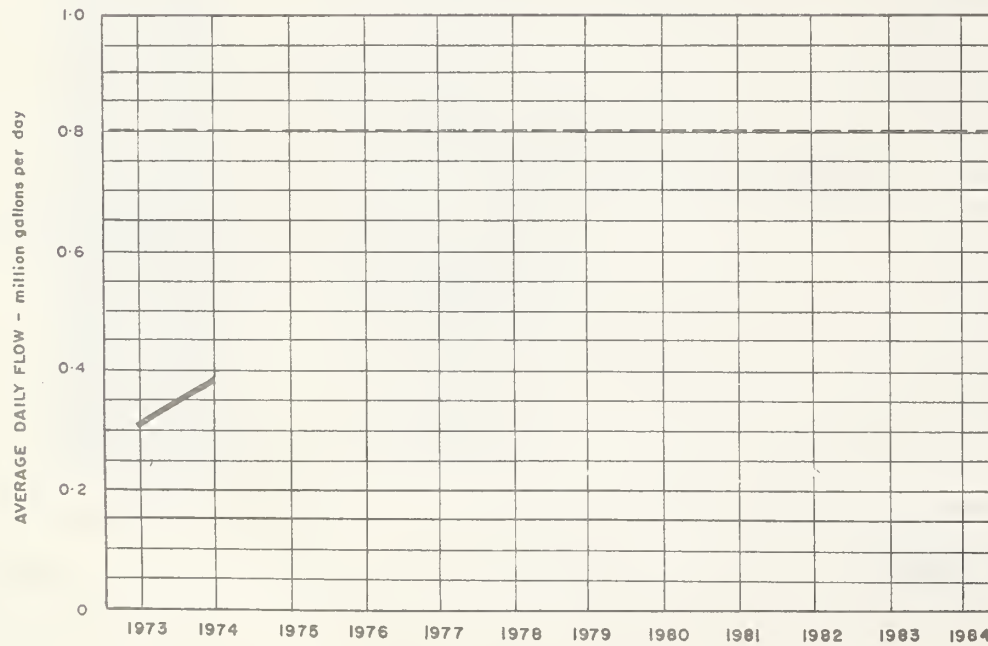
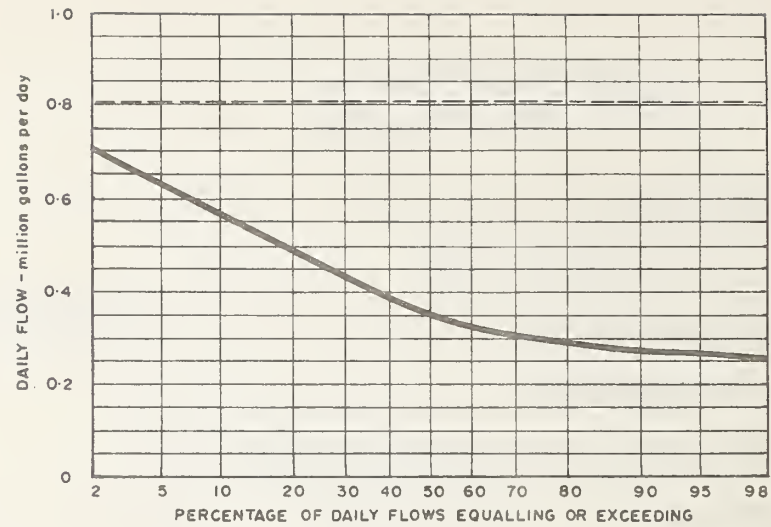
YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			\$/M.G	¢/lb BOD
1974	143.31	53,454	373	17



# OPERATING EXPENDITURES

Regular Staff	\$ 23,428	\$
Casual (Unclassified) Staff	2,612	
TOTAL SALARIES AND WAGES		26,040
TOTAL EMPLOYEE BENEFITS		2,344
TOTAL TRANSPORTATION AND COMMUNICATIONS		1,614
Insurance	773	
Sludge Haulage	4,719	
Repairs and Maintenance	410	
Other Services	280	
TOTAL SERVICES		6,182
Machinery and Equipment	4,304	
Chemicals	2,151	
Utilities	6,326	
Other Supplies and Equipment	4,493	
TOTAL SUPPLIES AND EQUIPMENT		17,274
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		
GRAND TOTAL	GRAND TOTAL	\$ 53,454

# PROCESS DATA FLOWS

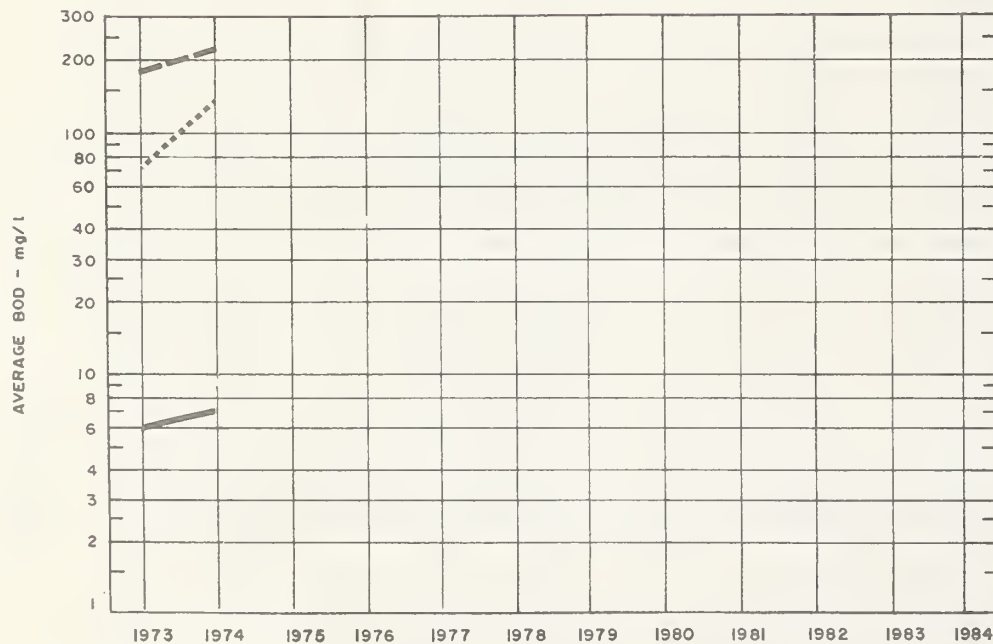
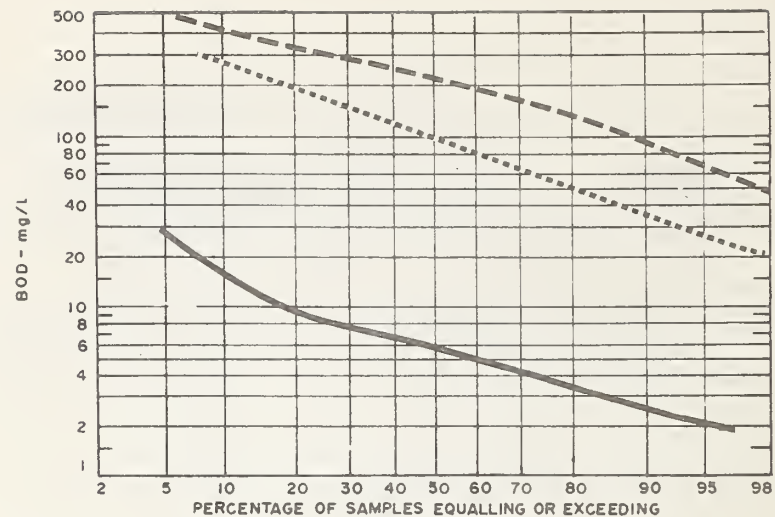


DESIGN CAPACITY - - - - -

# PLANT PERFORMANCE

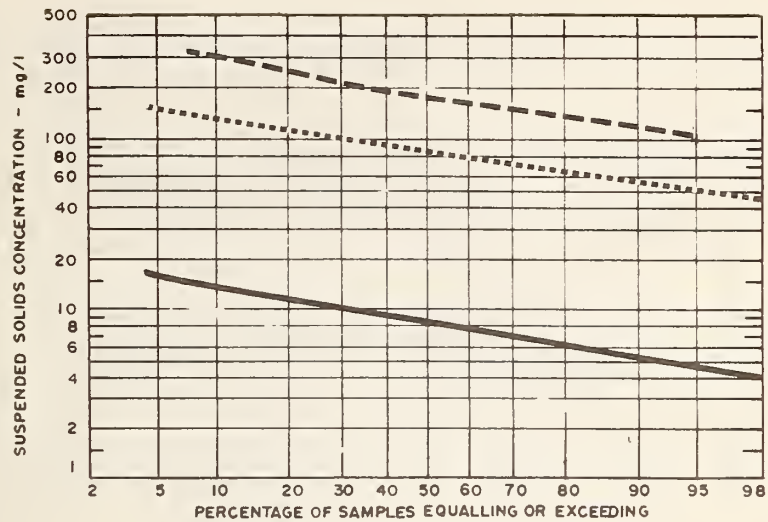
MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 <sup>3</sup> pounds	mg/l	mg/l	%	10 <sup>3</sup> pounds	mg/l P	mg/l P
JAN	13.93	.44	.73	189	5	97	26	180	7	96	24	5.7	.8
FEB	14.00	.50	.63	161	4	98	22	256	5	98	35	5.6	.6
MAR	17.17	.55	1.25	164	4	98	27	154	6	96	25	4.4	.9
APR	15.32	.51	.67	260	4	98	39	172	6	97	26	4.8	.7
MAY	13.16	.42	.74	194	8	96	24	114	6	95	14	3.9	1.0
JUNE	11.60	.39	.59	284	6	98	32	176	6	97	20	5.1	.6
JULY	10.38	.33	.72	252	15	94	25	189	8	96	19	6.8	.8
AUG	8.57	.28	.33	280	8	97	23	183	5	97	10	7.5	1.4
SEPT	9.37	.30	.39	480	7	99	44	280	5	98	26	6.2	1.0
OCT	8.74	.28	.33	480	9	98	41	260	5	98	22	7.7	1.4
NOV	10.47	.35	.50	360	6	98	37	240	5	98	25	6.0	.9
DEC	10.60	.34	.39	440	4	99	46	360	5	99	38	9.0	.8
TOTAL	143.31	-	-	-	-	-	307	-	-	-	259	-	-
AVG.		.39	MAXIMUM 1.25	221	7	97	26	187	6	97	22	5.5	.8
No. of Samples	-	-	-	67	70	-	-	67	71	-	-	67	71

# BIOCHEMICAL OXYGEN DEMAND

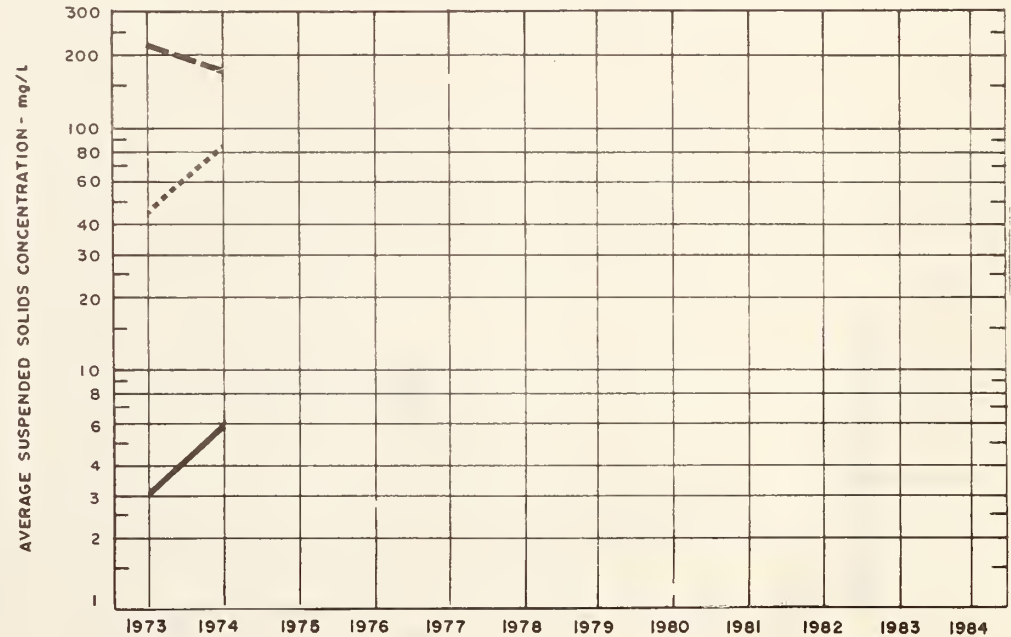


PLANT INFLUENT    - - - - -  
 PRIMARY EFFLUENT    . . . . .  
 PLANT EFFLUENT    —————

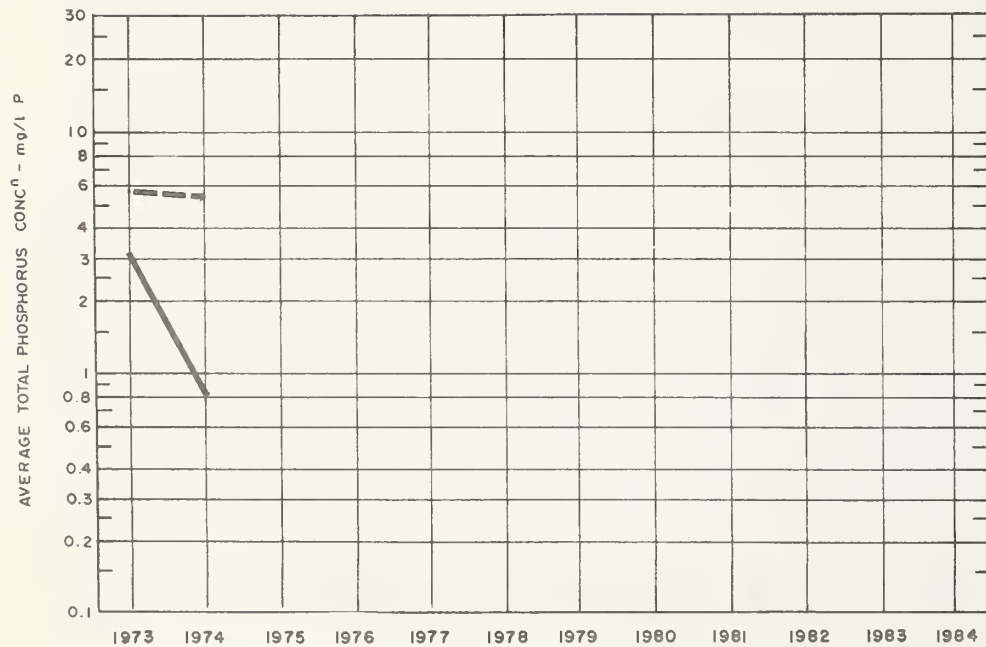
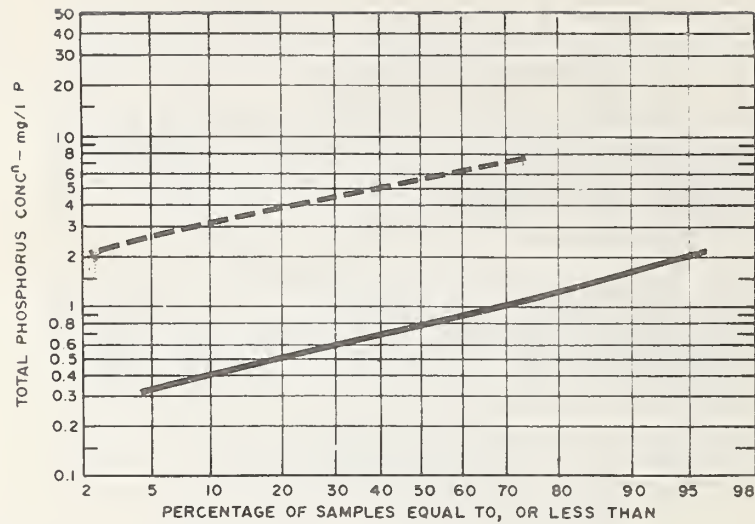
# SUSPENDED SOLIDS



PLANT INFLUENT      - - - - -  
 PRIMARY EFFLUENT      . . . . .  
 PLANT EFFLUENT      \_\_\_\_\_



# PHOSPHORUS

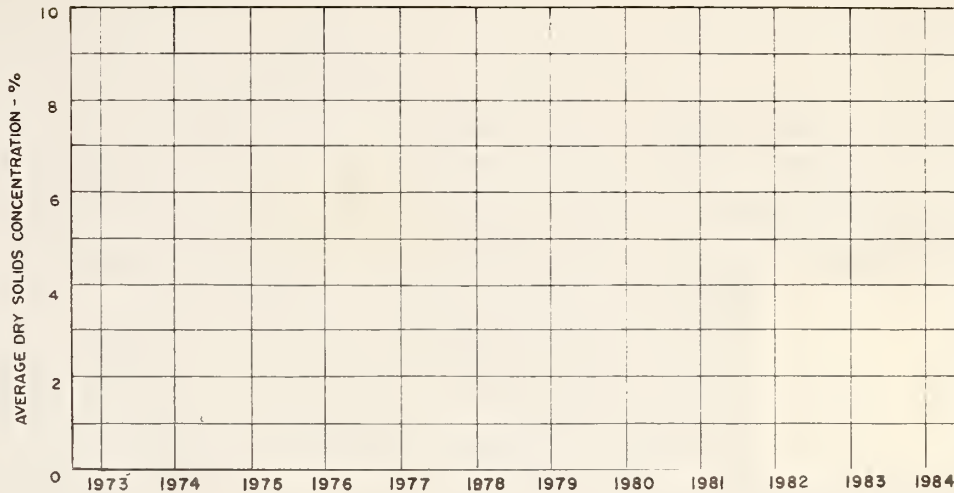


PLANT INFLUENT -----  
PLANT EFFLUENT —————

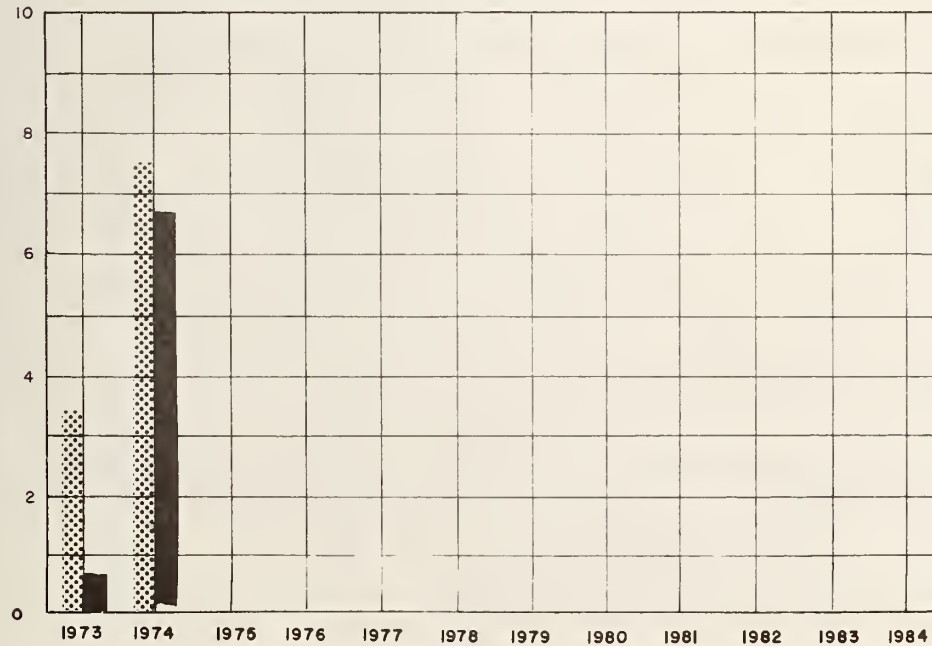


# DIGESTION

RAW SLUDGE .....  
DIGESTED SLUDGE —————



QUANTITY OF SLUDGE - 10<sup>6</sup> GALLONS



RAW SLUDGE TO DIGESTER .....  
DIGESTED SLUDGE REMOVED —————



# TREATMENT DATA

MONTH	GRIT	CHLORINATION		PRIMARY EFFLUENT		AERATION			SLUDGE DIGESTION and DISPOSAL							
	QUANTITY REMOVED cubic feet	CL <sub>2</sub> USED pounds	AVG DOSE mg/l	BOD mg/l	SUSPENDED SOLIDS mg/l	MLSS CONC mg/ l	F/M day <sup>-1</sup>	AIR  1000 ft <sup>3</sup> lb BOD	RAW SLUDGE			DIGESTED SLUDGE			SUPER-	AMOUNT HAULED cubic yards
									QUANTITY  10 <sup>3</sup> gallons	TOTAL SOLIDS %	VOL. SOLIDS %	QUANTITY  10 <sup>3</sup> gallons	TOTAL SOLIDS %	VOL SOLIDS %	NATANT T. S. %	
JAN	58	315	2.3	83	72	1800	.21		47.7			41.0				244
FEB	30	235	1.7	52	65	1700	.15		43.7			41.0				244
MAR	29	303	1.8	113	76	1600	.40		37.8			17.9				107
APR	41	279	1.8	136	83	1900	.38		44.1			30.0				179
MAY	27	345	2.6	147	91	2200	.15		74.7			45.6				270
JUNE	11	353	3.0	125	77	1700	.15		66.7			38.7				229
JULY	27	393	3.8	166	92	1600	.17		88.4			101.3				601
AUG	18	388	4.5	167	80	1600	.15		77.0			94.1				559
SEPT	16	355	3.8	240	115	1800	.21		69.2			71.3				423
OCT	24	274	3.1	220	112	1700	.19		57.4			85.6				508
NOV	23	285	2.7	178	128	1800	.18		59.9			64.9				385
DEC	32	310	2.9	240	140	1700	.25		66.2			50.5				300
TOTAL	336	3835	-	-	-	-	-	-	733	-	-	681.9	-	-	-	4049
AVG.	2 cu. ft/mil gal	320	2.7	131	84	1800	.22		61			59				337



**TD  
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